

# The Industrial Revolution - day 1

Entrance task: Think:  
What is a revolution?  
Today: **Intro to the**  
Industrial Revolution -  
Why England  
Homework: Ch. 22-2



QUIZ!!!!



# What is a revolution?

What are the ingredients of a revolution?

Does it take two to tango?

Are the results always good or bad?

Are there always lasting results?

## The Industrial Revolution

- Began in mid-18th century (1750) in England
- England had the necessary ingredients for the growing industrial development
- Necessity is the mother of invention

## Why England: Political Advantage

study guide p 136

- Stable government
- Mercantilism
- Empire - resources & markets
- Enclosure Acts = Labor source
- Isolated from continental problems
- Common market - no trade barriers



## Economic Advantage

- Scientific agriculture
- Transportation system
- Lots of raw materials
- Huge markets
- Labor surplus
- Available capital (\$)



## Special Advantages

- Mobile and growing urban population
- Social approval of profit motive
- Interest in science and technology
- Innovation was valued
- Calvinist work ethic



## Geographic Advantage

- No place was more than 60 miles from the sea
- Secure island location





### European Railroad Expansion, 1825-1870

Data are kilometers of railroad track in use.

Country	1825	1830	1835	1840	1845	1850	1860	1870
Austria						1,357	2,927	6,112
Belgium						854	1,729	2,897
Britain	43	157	544	2,411	4,081	10,962	14,693	19,987
France		31	141	410	875	2,915	9,167	16,465
Germany/ Zollverein			6	469	2,143	5,856	11,089	17,211
Italy				20	152	620	2,404	6,429
Russia				27	144	501	1,626	10,731
Spain						28	1,649	5,295
Switzerland						25		
Total Continent		31	167	1,421	4,772	12,362	30,591	65,140
Total Europe	43	188	711	3,852	8,853	23,024	45,194	85,127
Percent in United Kingdom	100	84	77	63	46	46	48	31

Source: Compiled from data in B.R. Mitchell, *European Historical Statistics, 1750-1970* (London: Macmillan, 1975), pp. 581-584

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## David Ricardo

Low population = Higher wages

Lower wages  
= pop. decline

**Iron Law  
of Wages**

Higher wages  
= pop. growth

*Pay a subsistence wage*

Higher pop. =  
Lower wages

## Thomas Malthus

- The dismal science of economics
- Population growth will exceed the food supply
- Famine, war, disaster needed to keep population in check



## Homework

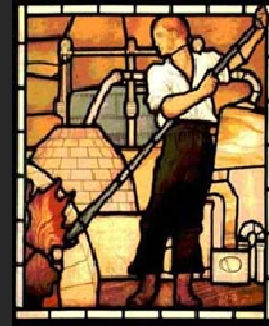
### Chapter 22-2


# The Industrial Revolution - Day 3

Entrance task: *Think - why did the industrial revolution spread at different rates on the continent?*

Today: *The Industrial Revolution spreads*

Homework: Ch. 22-3



 The Industrial Revolution on the Continent. The major developments took place in Germany and in the coastal areas along the English Channel where there were better natural resources or pools of labor.



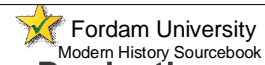
## Chart interpretation

In groups, examine the charts relating to the industrial revolution.

List 3 conclusions that may accurately be drawn from this information

Is there any info that seems contradictory?

**Table 1**  
**Percentage Distribution of the World's Manufacturing Production,**  
**1870 and 1913**  
*(percentage of world total)*



	1870	1913
<b>USA</b>	23.3	35.8
<b>Germany</b>	13.2	15.7
<b>U.K.</b>	31.8	14.0
<b>France</b>	10.3	6.4
<b>Russia</b>	3.7	5.5
<b>Italy</b>	2.4	2.7
<b>Canada</b>	1.0	2.3
<b>Belgium</b>	2.9	2.1
<b>Sweden</b>	0.4	1.0
<b>Japan</b>		1.2
<b>India</b>	11.0	1.1
<b>Other Countries</b>		12.2

<http://legacy.fordham.edu/Halsall/mod/indrevtabs1.asp>

1 2 3 4 5 6 7

**Table 2**  
**The Rate of Industrial Growth in Five Selected Countries**  
**Indices of Industrial Production**

	UK	France	Germany	Russia	Italy
<b>1781-90</b>	3.8	10.9	-	-	-
<b>1801-14</b>	7.1	12.3	-	-	-
<b>1825-34</b>	18.8	21.5	-	-	-
<b>1845-54</b>	27.5	33.7	11.7	-	-
<b>1865-74</b>	49.2	49.8	24.2	13.5	42.9
<b>1885-94</b>	70.5	68.2	45.3	38.7	54.6
<b>1905-13</b>	100.0	100.0	100.0	100.0	100.0
<b>% of world industrial production in 1913</b>	14.0	6.4	17.7	5.5	2.7

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1 2 3 4 5 6 7 8

**Table 3**  
**Output of Coal and Lignite\* - Selected Countries, Annual Averages**  
*\* very soft coal - poor quality* in million metric tons

	UK	France	Germany	Austria	Belgium	Russia
1820-4	17.7	1.1	1.2	0.1	-	-
1840-4	34.2	3.5	4.4	0.52	4.1	-
1860-4	86.3	10.0	20.8	4.1	10.2	0.04
1880-4	158.9	20.2	65.7	17.0	17.5	3.7
1900-4	230.4	33.0	157.3	38.8	23.3	17.3

**Table 4**  
**Output of Pig Iron - Selected Countries, Annual Averages**  
 (in thousand metric tons)

	UK	France	Germany	Austria	Belgium	Russia
1781-90	69	141	-	-	-	-
1825-29	669	212	90	85	-	164
1855-59	3,583	900	422	306	312	254
1875-79	6,484	1,462	1,770	418	484	424
1900-14	8,778	2,665	7,925	1,425	1,070	2,773

1 2 3 4 5 6 7 8

**Table 5**  
**Growth of the Cotton Industry in Selected Countries**  
 (Cotton Spindles - Selected Countries, Annual Total Figures [in 1000's])

	UK	France	Germany	Austria	Belgium	Russia
1834	10,000	2,500	626 ('36)	800	200	700 (1840)
1877	39,500	5,000	4,700	1,558	800	2,500
1913	55,700	7,400	11,186	4,909	1,492	9,212

**Table 6**  
 [See this data presented in a variety of ways - [Table 6 Extra](#)]  
 Spread of Railways in Ten Selected Countries  
 (Length of line open [in kilometers [1km = 5/8 mile]])



	1840	1860	1880	1900
Austria-Hungary	144	4,543	18,507	36,330
Belgium	334	1,730	4,112	4,591
France	496	9,167	23,089	38,109
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Spain	-	1,917	7,490	13,214
Sweden	-	527	5,876	11,303

1 2 3 4 5 6 7

**Table 7**  
**Illiteracy in Europe, c. 1850**

(Approximate Percentage of Adult Illiterates is Indicated Where Known)

<b>Countries with less than 30% illiterate</b>	<b>Countries with 30 to 50% illiterate</b>	<b>Countries with over 50% illiterate</b>
Denmark	Austria 40-45%	Bulgaria
Germany	Belgium 45-50%	Greece
(Prussia 20%)	England 30-33%	Hungary
Netherlands	France 40-45%	Italy 75-80%
Scotland 20%		Portugal
Sweden 10%		Rumania
Switzerland		Russia 90-95%
		Serbia
		Spain 75%

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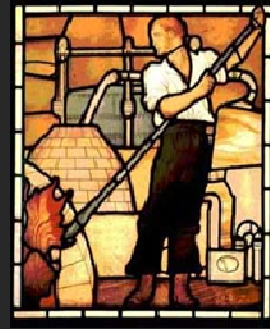
**Table 8**  
**Population**

(tentative estimates in millions - much of it guesswork)

<b>*</b>	<b>1750/1</b>	<b>1800/1</b>	<b>1850/1</b>	<b>1990</b>
<b>Great Britain</b>	7.4	10.5	20.8	57.1
<b>France</b>	21	27.3	35.8	56.1
<b>Germany  </b>			34.0	79.0
-[Germ+ Aust]	18	23		
<b>Austria  </b>			17.5	7.6
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<b>Russia</b>	28	40.0	68.5	146.4
<b>Spain</b>	8.2	10.5	15.0	39.6
<b>Sweden</b>	1.8	2.3	3.5	8.4
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# Homework: Ch. 22-3

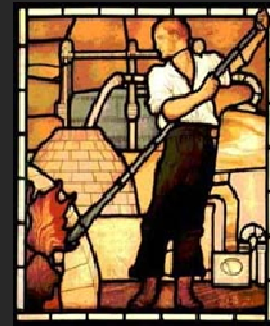


## The Industrial Revolution - Day 3

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Homework: Ch. 22-3








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 Fordham University  
Modern History Sourcebook

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(base figures 1885-1913 = 100)

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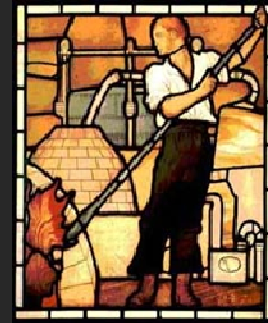
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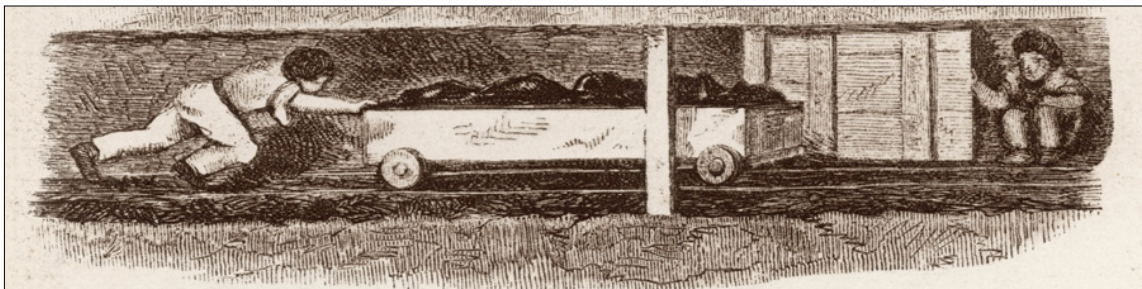


# Capital and Labor in the INDUSTRIAL REVOLUTION



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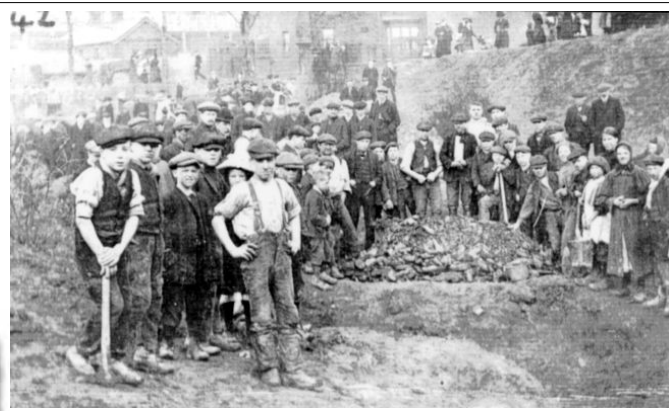




CHILD-LABOUR IN COAL-MINES OF THE 'FORTIES: A LITTLE "TRAPPER" (ON RIGHT) OPENING AN AIR-DOOR FOR A TRUCK TO PASS THROUGH.

"The trappers sit with a string attached to the door, and pull it open the moment they hear the corves (coal-trucks) at hand, and the moment one has passed they let the door fall to. . . . They are in the pit the whole time it's worked, frequently above twelve hours a day. They sit, moreover, in the dark."

*All the Illustrations on this page and the extracts accompanying them are reproduced from woodcuts and an article in "The Cyclopædia of Useful Arts" (1840-5).*



But now mark the effect of the system on women: it causes a total ignorance of all domestic duties; they know nothing that they ought to know; they are rendered unfit for the duties of women by overwork, and become utterly demoralized. In the male the moral effects of the system are very sad, but in the female they are infinitely worse, not alone upon themselves, but upon their families, upon society, and, I may add, upon the country itself. It is bad enough if you corrupt the man, but if you corrupt the woman, you poison the waters of life at the very fountain. Sir, it appears that they are wholly disqualified from even learning how to discharge the duties of wife and mother.

REPORT ON WORKING WOMEN

SOURCE: [HTTP://WWW.LEARNINGCURVE.GOV.UK](http://www.learningcurve.gov.uk)



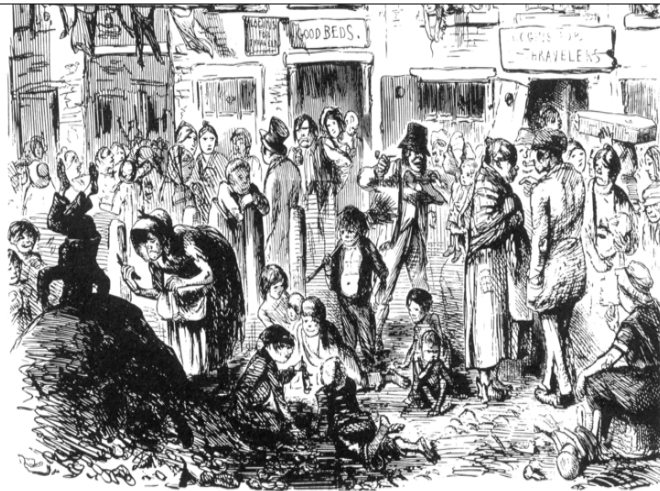
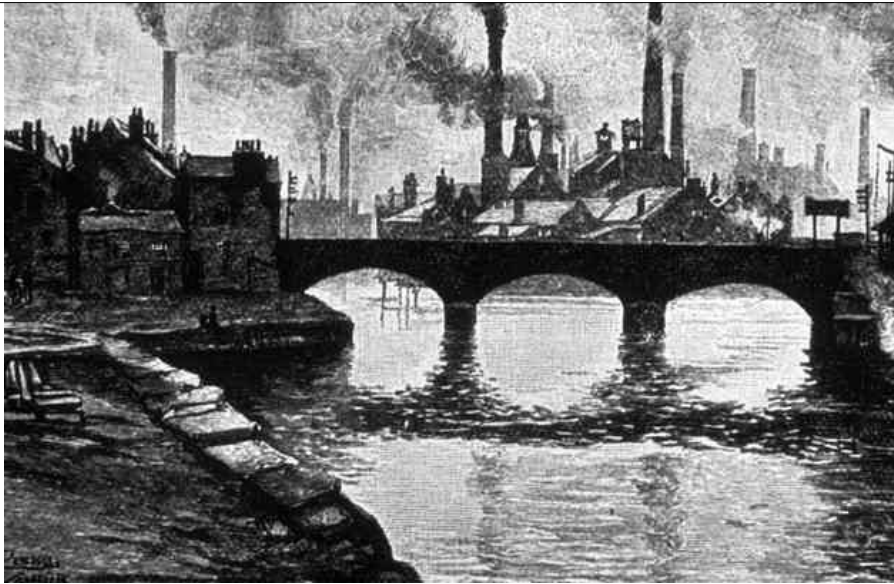


## *Combination Acts - 1799*



## *Living Conditions*





A COURT FOR KING CHOLERA.

## The Human Side of the Industrial Revolution

- 3 Groups - Owners, Workers, Economists
- \* read evidence
- \* discuss questions
- \* present to class



## *Homework*

*Review for Test on Friday*  
*DBQ due Wednesday, 1/28*